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57 **THE ARTICULATED GLASS BLOCK**

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63 **Field of Search** 52/304, 306, 307, 52/308, 474,
64 476, 477, 49/501, 171

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102 **ABSTRACT**

For patenting purposes, this application uses Provisional Patent Application Number 60/429,527 and its filing date of November 26, 2002 to backdate this application. A functional glassblock window comprised of glass blocks join in symmetry within a framework of sectional sashes that join mechanically to form one integral panel that of an appropriate size for the desired opening.

THE ARTICULATED GLASS BLOCK

Description

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention is directed generally to the art of building construction and more specifically to operable windows used in building construction.

2. Description of the Invention Background

Glass blocks are used widely throughout the world especially in Europe. Today innovation has moved glass blocks beyond window replacement industry which for decades its use was exclusively for partitions and windows in buildings of all kinds. Glass block windows offer a variety of advantages over conventional, casement windows. For example, glass block windows have been widely used for protection against vandalism or break-ins. Glass blocks windows also offer protection against the elements, especially high winds. Traditional windows are easily compromised by projectiles a loft due to the high winds. Because glass block windows are comprised of a plurality of glassblock interconnected to form a wall. During high wind events, it is possible for a projectile to compromise one block without effecting surrounding the blocks.

Glass block windows may be constructed using cement or silicon permanently connecting a number of glass blocks together to form a panel of an appropriate size for the desired opening. The panel of blocks are joined using the like to the opening. It is precisely because of that rigid, permanent, panel construction that many of the above-identified advantages are possible. It is because of that permanently fixed attachment of the panel to the surrounding structure that glass block windows suffer from a number of disadvantages.

Due to fixed glass block window not opening a glass block window, fire codes may prohibit their use particularly when there is only one window in a room and no other safe fire escape is available as proscribed by law. Additionally, the inability to open a glass block window it obstructs nature airflow from outside to the inside. Although vents can be installed in a glass block window, they interfere with the aesthetic value of the glass block window. Glass block windows are constructed using cement or silicon permanently connecting a number of glass blocks together to form a panel make it difficult to replace a broken block. Technological advancements in the window industry have fostered more energy efficient window systems. The basic design of glassblock windows have not changed for decades.. Finally, because of the fixed attachment of the panel to the surrounding structure, it is impossible to clean the outside of the glass block window from the interior of the structure.

Thus, the need exists for a glass block window, which is capable of functioning as a traditional operable window while retaining the desirable features of a glass block window.

This device like application no. 20020096266 and patent no. 5,675,948 will use a vent that will be introduced to the network in order to allow ventilation. However, unlike these two devices they will not be a part of fixed window assembly they can be removed. Like patent application no, 2001/0002525 and pat. No. 5,511,352 the glass blocks themselves will allow movement to provide an opening for ventilation. However, in both of these models, the assemblies are very heavy and hard for operators to use. The place the weight of the entire assembly on hinges placed on the sides or side of the window. My design like patent 5,511,352 makes available the entire window opening for use unlike 5,675,948 that limits airflow to a vent in the size of two glass blocks. My design is superior to both designs in that it uses basic physical principles to its benefit.

The window assembly will be effort free design that provides the user the flexibility of casement window system. Using sliding arms mounted perpendiculars to load bearing walls, extend the wall's ability to hold up or leverage the weight of the blocks and provide lateral motion. The user only task is to collapse the support at the side of column closest to the windowsill. Push the column toward the collapsed support in order to create enough separation to rotate the column to the side. Then user pushes and turn in sequence the columns toward the windowsill. Creating a opening in the center of the opening .

THE SUMMARY OF THE INVENTION

The Invention consists of glass blocks assembled in distinct and uniform subset of columns. The columns or sectional sash units are distinct individual systems of connected blocks. Columns can vary in composition and size but one thing remains constant wither upright or side ways because most glass blocks are square they form rectangular, The invention has one essential features one is that the columns or rows are supported entirely by a retractable arm/slide cantilevers. The cantilevers are anchored to load bearing structure in order to offset the weight of the assembly. However, it will be clear to those of ordinary skill in the art that the present invention could be embodied in other types of window using this basic element as their under pinning.

One embodiment would placed sectional sash units suspended between a tandem of telescoping cantilever . The cantilevers will be mounted on a load bearing wall within a cabinet or pocket within the wall adjacent the window. The cantilever extends from the cabinet to the opening . The door to the cabinet is opened a door that serves as a opening jamb is unlocked and opened into the cabinet or wall pocket. The sectional suspended between the telescopic or slide cantilever are pushed towards the pocket. The sectional unit are turn side ways and force into the pocket, collapsed one on another. The jamb is then closed and a opening is revealed A second design would mount the cantilevers to the mouth of the opening to either side to side or top and bottom. . A means to rotate will be incorporated in most designs joined between the cantilevers and the sectional units. The means to rotate will allows the unit to rotate up to 90 degrees. The user in this would pull the key sectional unit toward themselves clearing of the sweep edge or jamb. The sectional units rotate the unit sideways 90 degrees Then pushes the unit back in place. The other sectional units move linear along a single plane to the side or open down . as the sectional units separate the user turns the

sectional unit 90 degrees and to the side one section collapsed to the others inside the windowsill along the jamb.

The present invention is directed to an operable glass block window comprising a window frame sized for insertion into an opening in a structure. The window sash assembly provided is divided into sectional components each carries a plurality of glass blocks. Their are two types of embodiments on that positions a revolving fixture between the sectional components and those that fix the cantilever directly to the sectional sashes. Embodiments one the sectional sashes a move relative to the revolving fixtures and cantilevers . Embodiment two the sectional sashes move relative to the cantilevers.. In one embodiment of the present invention, the sashes are capable of moving to the left and right of the frame into a wall pocket.

The operable glass block window of the present invention provides the advantages of traditional fixed and other operable, glass block windows. That is, the glass block window of the present invention provides protection against vandalism as well as break-ins. The glass block-window of the present invention provides excellent protection against hurricanes and other gale force winds. The glass block-window of the present invention is serviceable , replaceable and adaptable and repairable. Glass block windows constructed according to the teachings of the present invention in combination with other technology is more energy efficient and reduce the transmission of noise from the outside to the interior of the building then traditional and other operable windows..

Because the glass block windows of the present invention are capable of being opened, they provide the required fire exits and, thus, their use is not prohibited by fire codes. Because the glass block window can be fully opened to a position where the window sashes move to the side pockets adjacent the opening maximum ventilation is achieved. Additionally, the ability to open the window to such a degree allows easy access to the outside of the window from the inside of the room for convenient and safe cleaning. Those, and other advantages and benefits of the present invention, will become apparent from the Description of a Preferred Embodiment here in below.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig.1 shows a the perspective of a glass block fig 2 shows a perspective of a column of glassblock Fig 3 a rendering of an adaptable integrated telescopic arm and lazy suzan Fig 4 Shows the glide plate Fig 5 illustrate the strap holding the column of blocks together. Fig 6 shows the gate in the windowsill. Fig 7 illustrates a type of gate locking mechanism. Fig 8 shows the wall pocket Fig. 9 shows the access panel to the windowsill and wall pocket .Fig 9 shows a type of locking mechanism for the access panel door. Fig 10 shows how telescopic arm is mounted cross to wall bearing member for the window. Fig 11 illustrates the window closed Fig 12 illustrates the gate incorporated into the windowsill opening Fig 13 illustrates the arm retraction into wall pocket via a open access panel and windowsill gate Fig 14 illustrates the columns using lazy suzan turning to on side. Fig 15 illustrates all the columns collapsed upon one another within the wall pocket. Fig 16 shows the window gate closed to the pocket and a screen replacing the glass blocks

DESCRIPTION OF THE PERFERRED EMBODIMENT

The glass block window assembly is comprised of plurality of sectionals sash units that join mechanically to form a complete glassblock sash panel sealing an opening. The sectional of a sash can be constructed of silicone or cement sandwiched between the blocks that are capped with a rigid mounting fixture. The means to revolve devices are cantilevered between a tandem of two parallel cantilevers that project

The trunk of the means to project is recessed or collapsible mounted to a support wall/ member. In some applications, the cantilever and means to revolve are joined into one integrated structure that can be inter-locked with other like fixtures that incorporates smaller into greater and greater into even greater is repeated until the configuration fits the opening. This design allows multiple units of fixture to be interlocked to fit any application. The custom configurations are interlocked via a glide plate, float medium inter-connector mounted between the hollow box tubes, or other like dynamic medium mounted concentrically. The glide plate allows the interlocked tubes to glide independent of one another. Very heavy robust assemblies may use a crossbeam that traverses the opening to increase the load bearing ability of the assembly. The cantilever is ferried across the cross member. The sash sectional will be mounted between a top and bottom telescoping assemblies. The assembly may use two opposing units mounted on either side of the window. The recessed arms extend out from a pocket within that wall. The pocket is sized to accept the collapsed sectional units. The gate that serves as the opening's jamb is found unmolested between the upper and lower arm. The closed gate serves as the opening's jamb. So when the arm is fully extends and the sectionals are snugly rest against the window jamb. The gate hinged to the outside wall can be open and closed by a to the pocket away from the column. The open gate collapsed against the outside wall of the pocket serves as a gateway to the pocket. The columns moving along with the arm is pushed into the pocket closest column first. In some embodiments, the columns will only exhibit only one plane of motion. The face of the column is fixed. The motion of the column is limited to that of the extended and then contracted arm. The side to side motion of the individual columns is similar to sliding motion of panel's make up a curtain.

In other embodiments sandwiched between the column and the cantilever is a rotational base that revolves clockwise and counterclockwise. Space is created between the contacted and extended arm. This assembly design allows columns to fill the pocket side ways decreases the depth needed to house the column. This embodiment closely mimics the behavior of a curtain. The panel's folds one on to another allowing compression surface area. . An access door is mounted perpendicular to the windowsill door that door is design to reveal area just after the windowsill door and the entire pockets. The open access panel to allow total accesses to all sectionals and window jamb gates. The user can push the sectionals, closest column in and farthest out. Once the arms are extended and the sectional s situated into position, the shut gate then becomes the jamb. This action is repeated on the other side, in this application the lead edges of the outermost columns meet in the middle to form a kinetic seal.

The user opens the access panel then they open the gates to the window jamb. The user then moves the columns closest to the open gate toward the pocket while turning the sectionals 90 degrees to a stop. This action is repeated until all the sectionals are collapsed into their adjacent wall pockets. An opening is then revealed making way for a screen or egress in the case of an emergency. This same application can be used for accordion doors made glass blocks.

This system can be mechanized. A safety screen can be inserted in place of the block panel allowing natural airflow. The security screen is comprised of security bars sandwiched between a tradition screen. The simplicity of this system makes it is a common sense approach to add functionality to glass block walls.

CLAIMS

1. What is claimed sectional sash units come together to form a whole sash panel

- (a) a row is defined as a sash comprised of a tier of blocks poised symmetrically horizontal a column as vertical
- (b) a complete panel sized to fit a specific opening is constructed when either a plurality of columns or rows draw to a union
- (c) the sectional sashes can be constructed using of silicone or cement sandwiched between the blocks the are capped with a rigid mounting fixture
- (d) the blocks can be inserted into oblong shaped grate which locking cross ties that grasp hold the flat area between the lips of the glassblock.; The grate is serviceable, strong, alterable, adaptable and replaceable

2. What is claimed the cantilever supports the sectional units

- (a) a means rotate is incorporated into the cantilever design revolves 90 degrees to a stop
- (b) the cantilever uses means of incrementally increasing height and width and of equal length joined by glide plate inserts ,the fixtures forms an accordion like cantilever
- (c) at equate distant points along the cantilever revolving plates are joined to the sectional sashes .
- (d) the cantilevers provide the medium for the projection , retraction and rotation of the sectional sashes

3. What is claimed a means of storage

- (a) sweep jamb/gutter can be collapsible or fixed, a fixture that fills the space between the jamb or gutter equal to distance needed for the sectional sash to rotate freely
- (b) sweep jamb length is that of the enact sash the width is that of the sash the height is equals the minimum distance needed to rotate the sectional closest to it without hitting the window jamb or gutter
- (c) fixed applications the sectional is pulled away a distance a from the fixture
- (d) the cantilever can be attached directly to the mouth of the opening,
- (e) sashes are attached via branches that form means of rotating , cantilever collapsed against the openings jamb with the attached sectional units
- (f) countersunk cantilevers can extend from the pocket to the opening, the sashes travels in relationship to the cantilever and its attachments

342 (g) the wall pocket is adjacent the opening. The operator opens the access panel to the wall
343 pocket then the gate that serves as jamb. Then push the sectional sashes through the gate
344 into the pocket. Shut the gate behind the last section.
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346 Though the present invention was shown and described with references to the preferred
347 embodiments, various modifications thereof will be apparent to those skilled in the art and,
348 therefore, it is not intended that the invention be limited to the disclosed embodiments or details
349 thereof, and departure can be made therefrom within the spirit and scope of the appended claims.
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